### **General Comments about REVISION 1**

- 1) While it is unknown exactly who will be in charge of public relations at this point, we added some discussion with regards to how and when communication will be handled.
- 2) The working hours are somewhat variable until the closure. We will be working normal hours leading up to the closure, and then again after the closure. During the closure we are planning to work 24 hours per day as long as there are critical path items to complete.
- 3) Communication with VAOT will be paramount throughout the entire project. our on site superintendant (Harry Pottle) will be in continuously be in contact with Joe Knipes and all other interested parties. Inevitably, problems and questions will come up and we will relay those immediately.
- 4) The questions about the grout and concrete strength are noted and valid. In general we expect the concrete in the sub footing to be placed and curing while the arch is being erected. Then the grout bed under the footing will take be placed and some engineering will be done to determine actual strength required to set the abutment breast wall and wing walls. The specialized NMB grout sleeves should have sufficient strength (4000 psi) in around 18 hours.
- 5) The field office setup is almost complete and is shown on the schedule as being worked on this winter. Some more items were created on the schedule to reflect the installation of the Erosion Control Measures and anticipated dates for critical submittals.
- 6) see #4.
- 7) As we have discussed, we believe the rock removal will be done using large excavators, hammers, and rippers. We will be in contact with Maine Drilling and Blasting to develop a "back-up" plan and discuss with them how to present it to VTRANS. They will be available during the early part of the closure if necessary.
- 8) We expect to have the vast majority of the ledge removed before placing any concrete. The items on the schedule that say "prepare ledge..." are in there for inspection and cleaning time.
- 9) We adjusted the sequence of the superstructure. Because the manufacturer recommends 7 days of curing before application of the membrane, we will place the overlay first and while the curing is taking place, the parapet(s) and sidewalk can be formed and placed. This should give enough lag between the placement of the deck and the installation of the membrane to satisfy the manufacturer.
- 10) see #8

- 11) see #5
- 12) We also added a block of time in which the precast will be made. JP Carrara will ensure a VAOT inspector is present for all placements.
- 13) see #5
- 14) see #5
- 15) I did not specifically do that but one of our company policies is that our superintendents do "two-week" look ahead's every week. we will include VAOT in the distribution of the look ahead's and we should be able to give ample notice for any key inspections. The exact times may vary slightly but we should be able to get a good idea of when they will be necessary and give sufficient notice.
- 16) Consideration will be made if rock needs to be removed before the CIP concrete has developed its strength. We will work on the critical path as long as we can and if it is in the best interest of the project to shift priorities based on any set backs or unforeseen conditions, we will do so.
- 17) see #4
- 18) see #9
- 19) We will be paving surface once all other work is compete to avoid damage to the final course.
- 20) Details will be submitted with regards to the waterline materials. We added a few items in the schedule to indicate we plan to cut and cap the line before the closure and. We will keep in close contact with the interested utilities throughout the entire project.
- 21) Exact details are still being developed as to how the coping will be supported. Needless to say, more detail will be forth coming in the comprehensive erection plan.

## **Introduction / Description**

This narrative is written in accordance with section 900.645 – CPM schedule which is located on pages 48 – 52 of the special provisions. This project involves the removal and replacement of bridge 13 on a new alignment. The existing bridge is comprised of a cast-in-place arch which will be replaced by a NEXT beam style bridge with an aesthetic arch and precast arch panels in an effort to make the appearance of the new bridge similar to the existing.

This particular project presents its fair share of challenges with regards to the schedule. Perhaps the best way to navigate through this project is to break it down into 4 major categories; preconstruction activities, pre-closure activities, construction during closure, and post-closure activities.

## <u>PRECONSTRUCTION ACTIVITIES: Present time – Early March</u>

This section is basically described as preparation and planning. This phase begins with the bid date of 10/4/13 and also includes the preconstruction meeting(s), and the initial submittal of all applicable working drawings, schedules, and the process of issuing subcontracts and material contracts.

Specifically, this phase will last most of the winter into early February 2014. At that point, T Buck hopes to have all major items submitted on and approved. Depending on several factors, the precast concrete should be cast during this phase. JP Carrara will be supplying the precast and they are located in Middlebury so it is convenient to say the least. Our goal is to have all the precast made and ready before we begin construction on site. Other long lead items include the bearings from DS Brown and structural steel from ARC Fabricators.

Coordination between T Buck and the state will be essential. VAOT will be designating a public relations officer (yet to be determined) to facilitate the communication to the town and general public. We plan to have a general meeting before the closure to discuss our general direction and to explain the inconveniences that may arise during the demolition and construction phases. We will be available to answer any and all questions with regards to the schedule to anyone who asks throughout the entire construction.

## PRE-CLOSURE ACTIVITIES: Early December - April 19th

This phase begins with the mobilization of all the administrative materials (i.e. office trailers, phones, computers, temporary power, etc.). We plan to begin mobilizing the office trailers in early March so the process of installing phone and internet can begin and be completed for April 1<sup>st</sup>. Project demarcation fence, silt fence, and other erosion control measures will be installed per the approved ESPC. All the work completed in this phase will be done so using lane closures if necessary (to the least extent possible).

The EPSC installation will commence as soon as the office trailer(s) are setup and functional. The silt fence will be installed per plan and as needed around access roads and other soil disturbance. Special consideration and layout of the archeological area will be given and a demarcation fence will be installed around the area to avoid any disorder. After the erosion control measures are in place, we will be installing the access roads on the northeast corner at a minimum. We will also be preparing and constructing applicable lay down areas onsite. Once the access roads are constructed, we will be installing a platform under the bridge to facilitate debris containment and to provide a staging area for the precast arch installation. The platform will be constructed using old bridge beams with a crane mat deck. Some prep work may be completed while the access roads/crane mat is being constructed such as pockets chipped into ledge to accept the support beams that span the river. A more detailed explanation of how the platform will be constructed will be forth coming in the demolition plan.

All the detour signs will be laid out and dig safe will be called in for each location. The signs will be laid out and installed in close conformance with plan sheets 23-28. These signs will take about a week to install. The signs will be covered in preparation for the shutdown.

The waterline will be located, cut, and capped prior to the closure period. All applicable utilities will be notified with plenty of notice to assist if necessary.

### **Concerns / potential issues or conflicts:**

This phase is critical for the preparation of the shutdown. Layout is vital in this phase and we will need to determine exactly how and where we will establish off sets and bench marks for quick reference while we are excavating and demolishing the existing arch. The platform installation will present some challenges because it is important not to install the platform so it will interfere with the precast arch or its footings. We have entertained placing some sacrificial concrete on the existing "ledge shelf" on each side to provide a level surface to install the platform framing in the event that cutting the pockets into the ledge is impossible. It will also have to be installed in such a way that we will need to take it out after the arch is installed.

#### **Coordination with state and local officials / Crew Size:**

During this phase we anticipate working normal working hours (6:00 - 5:00) with a crew size in the range of 8-10 people as needed. Daily and weekly "goals" will be set and achieved in order to make sure all prep work is completed before the bridge closure. The crew will be relatively consistent and key personnel will be involved with the project setup so nothing gets lost in translation later.

The coordination between T Buck, VAOT, and local residents will begin to pick up during this phase. The PRO will most likely be developing a method of distribution for schedule and establishing a method for concerns to be properly relayed to the contractor and/or VAOT. Local residents and the general public will be notified when and where schedule updates will be given. We intend on having a meeting towards the end of this phase (before closure) and invite residents to ask questions and voice concerns to see if there is anything we can do to accommodate any reasonable requests.

# CONSTRUCTION DURING CLOSURE: April 19<sup>th</sup> – June 2<sup>nd</sup>.

This phase will begin with the closing of the road at 7:00 am on Saturday April 19<sup>th</sup>. The detour signs will be uncovered immediately before the road is closed.

We will immediately begin excavating the approaches to expose the Arch. The demolition process will last several shifts as we will be working 24 hours per day during the closure. There is a large amount of ledge to be removed on the abutment 2 side. We plan to expose the ledge during the excavation and attempt to rip it with a large excavator. The visible exposed ledge is layered and appears to be "excavatable" we acknowledge the hardness of the rock and we will utilize whatever means necessary to complete the rock removal in a timely manner. The excavation on abutment one side should be relatively simple when compared to abutment 2. The south side of the bridge will require around 300 CY of ledge to be removed which will take significantly longer than the excavation around the north abutment. The next step after the demolition of the existing arch and the removal of the specified ledge is to prepare for casting the arch footings and sub footings under the abutments.

The cast in place arch footings will be constructed and placed at the same time. We also hope to have the subfootings completed and placed within a day of the placement of the precast arch footings. While the concrete is setting up & curing, we will be constructing a shoring tower in the middle of our platform (which was installed in the pre-closure phase). Once the cast in place concrete for the arch footing has reached sufficient strength, we will begin the setting the precast Arch. The size and capacity of the tower has yet to be determined but needless to say it will be designed to support any and all applicable loads associated with the precast arch. During the installation of the arch, the concrete in the subfooting will be curing and developing strength. Once the majority of the ledge is removed, the preparation of the ledge prior to concrete will consist of cleaning and inspection by VAOT. Notice will be given before the inspection is required. Additionally we will plan to have as much of the project ready to inspect at one time to minimize the inconvenience to the geotechnical engineer.

Once the arch is set, we will set the abutment footings and place a 3" grout bed under them as shown in the contract drawings. Any applicable connection will also be grouted in accordance with the recommendation from JP Carrara. We anticipate using a redimix grout with a "non shrink additive." Once the footings are set and the grout has reached an acceptable strength, the abutments will be set in the keyway of the footings. The abutments will be set on HDPE blocks/wedges to ensure the proper elevation is achieved, then the connection points will be grouted and the keyway will be flooded with grout under the breast wall(s). The splice sleeves used to develop the connection between the abutment footings and breast wall / wing walls are manufactured by NMB Splice Sleeve. The connections will be supplied in the breast wall & wing walls and they will fit down over the protruding rebar sticking out of the key way in the

footing. The grout in the splice sleeves is pumped into the bottom port until the sleeve is filled up and then the grout needs to develop 4000 psi before the wall can be loaded (backfilled against). The wings on Abutment 1 are completely precast while the wings on abutment 2 consist of a precast panel and the remainders of the wings are cast in place against a near vertical face of ledge. While wing wall #3 and #4 are being finished, the backfill operation can commence on Abutment 1. When the wings are completed on the abutment 2 side, backfilling operation can commence.

We will start with the installation of abutment 1 breast wall and move to abutment 2 provided it is ready because at this point the critical path will become the installation of the NEXT beams so the superstructure can be completed. The NEXT beams will be the biggest challenge to set because they weigh approximately 110 kips. When the NEXT beams are delivered, they will be picked up and set using an operation which will be shown in better detail when the erection plan is finalized and submitted.

After the beams are in place, the closure strips will be formed and placed using rapid-set concrete. Then the placement of a leveling slab that extends to each barrier will take place. At this point in time, we plan to request permission to use a light weight vibratory screed to speed up the process. After the overlay (leveling slab) is placed, the cast in place portion of the bridge rail will take place and finally the sidewalk on the west side of the bridge can be formed and placed. We plan to place the overlay first because the installation of the membrane is contingent upon proper curing of the concrete. The manufacture (Sterling Lloyd) generally requires 7 days of curing prior to application of spray applied membrane.

While the superstructure is being built, backfill operations will be taking place and all the drainage structures (3 of them) will be installed per plan. In addition to the drainage, we will also be installing and activating a waterline which will be installed under the bridge. When backfill has reached the approach slab elevation, the precast approach slabs will be installed the seams between each piece will be formed and placed using the rapid set concrete.

Once the approach slabs are backfilled and the approaches are fine graded, we will install pavement. At this time, final surface pavement will be left off while the remaining work is completed. Then the guardrail and bridge rail will be installed and a final walkthrough will take place to ensure all applicable items are taken care of prior to opening the bridge to traffic.

The waterline installation will take place during this phase. The waterline will be suspended under the bridge and will be located through the back walls and under the approach slabs through a steel sleeve.

#### **Concerns / potential issues or conflicts:**

The success of this schedule depends on everything going as planned during this phase. The first major hurdle will be demolishing the existing arch and establishing the proper ledge elevation for the installation of the cast in place sub footings and arch footings. The borings only tell part of the story and we will have enough equipment onsite to adapt to any "normal" conditions that arise (i.e. Hoe Rams, Grinders, jack hammers, Etc.). We plan to have a blasting and/or drilling plan completed and submitted so if blasting becomes necessary, we will be able to move immediately with interruption from submittals / approvals. As a result of doing a plan so far in advance, there will likely be several potential scenarios presented in case one method becomes more feasible than another.

The noise generated during the demolition process may be significant. We will do our best to keep the noise to a minimum during night time hours, but it should be noted that in general, we do not expect to delay the project to prevent noise at night.

The cast-in-place concrete and grout will need to be completed in a timely manner. Cylinders and grout cubes will be taken and tested to determine the strength of each material. There will be some engineering presented to VAOT showing the required strength each component will need to develop prior to moving forward. For example, the cast in place sub footing will need to develop at least 1000 psi before we install the precast footing and grout bed. A more detailed explanation of each material will be forthcoming. The NMB Splice sleeve data indicates that cure time is relative to the ambient temperature. The chart indicates that 4000 psi can be achieved within 24 hours at 68 degrees and only 12-18 hours at 86 degrees. We will plan on heating the immediate area to the best of our ability in an effort to speed up the curing process. The heating method will most likely include ground heaters so we can run circulating hose down each face of the concrete. Temporary supports for each wall are not anticipated, however, if the need does arise, it will be during erection purposes and until the grout has reached 4000 psi. We anticipate removing any / all bracing prior to backfilling each abutment. The cast in place wing wall extensions on abutment 2 can develop the required streight without impacting the critical path as long as the breast wall can be installed so the NEXT beams can be installed. After the NEXT beams are installed, abutment 2 backfill operation is afforded some float in the schedule.

The precast concrete was designed to be at very specific elevation(s) so the removal of the ledge in the critical locations is a HUGE unknown. Based on the borings in the contract, there will most certainly be some ledge removal on both sides of the river. After an initial elevation is achieved, the preparation of the ledge on the back side of wing wall 3 & 4 is also very important to the timely completion of the substructure. We will have to cast the remaining portion of the aforementioned wings in place so the profile of the ledge will be "smoothed" out in an effort to

speed up the forming against the ledge. We feel it important to not include wing walls 3 & 4 in the critical path which is why it is very likely we will be setting the NEXT beams on the breast wall before the wings are completed on abutment two.

The NEXT beams are very heavy. We plan to use an enormous crane on the abutment one side near the end of wing wall 2 which should be able to set every piece of precast on the project. As soon as the backfill operations are completed, we will plan to use a rough terrain crane to set the approach slabs as the pad used for the big crane will have to be removed. A more detailed erection plan will be developed to ensure the installation of the NEXT beams is successful.

Once the NEXT beams are in place, the chain of events needs to take place in a flawless manner. The cure time for the concrete will be critical and may potentially come into play when moving from one step to the next. For example, after we place the Parapets on the bridge, we will need to wait a day (at least) before stripping the forms, and obviously the forms need to be stripped prior to placing the overlay. The same issue will come into play when we are getting ready to place the sidewalk after the overlay.

In general, this phase is obviously the most critical and the most important. We plan to have all the materials stockpiled and ready to go before the shutdown begins. The stockpiled materials will be readily available at all hours of the day or night so not to slow down production. We plan to have a "runner" available 24/7 to make any emergency runs to get a part or piece of something. By all accounts this schedule will be grueling and hard. We will be working through rain and all types of weather.

### **Coordination with state and local officials / Crew Size:**

During the closure, we plan to work 24 hours per day, 7 days per week. We plan to have a crew of 10 people on site at all times. There will be a total of 4 crews that will work 12 hours per day. (i.e. day crew from 6:00 am to 6:00 pm and a night crew from 6:00 pm to 6:00 am). Each crew will work 4 days and then take 4 days off. Each employee will be working approximately 50 hours per week. Each crew will have a foreman and they will "overlap" each other during shift change to ensure proper communication is maintained so nothing is changed or missed from one crew to another.

When critical path items are completed and the predecessors of those activities have a lag time (i.e. curing grout / concrete) the crew will have a list of other activities that can be completed in preparation of future tasks (i.e. build forms for closure placements, bridge railing, project cleanup, etc.) Once the arch is set, and the cast-in-place key is placed on top, the staging can be removed and other site work can be completed in the event the critical path is stalled for some reason.

The specific details of how VAOT will advertise the closure will be discussed in the coming months. However that information is relayed to the public will be maintained by the PRO. We will be available for any questions and any major changes to the schedule will be relayed as soon as possible to the PRO and resident engineer. The resident engineer will be deeply involved with the daily/hourly progress of the project and if at any point he deems it necessary to issue a change in the distribution of information, we will be able to do so.

Coordination the all applicable utilities will be key towards the end of the closure period. We will keep in touch with the water district and other interested parties so everyone is involved with the pressure test(s), chlorination, and flushing of the lines.

## POST CLOSURE ACTIVITIES: June 2<sup>nd</sup> - August 22<sup>nd</sup>

Once the road is opened to traffic, we will remove all the detour signs and stack/deliver the applicable signs to VAOT. A plan will be developed to leave the signs required for the remaining closures on the other concurrent projects in the area. Then we will begin the installation of the precast arch panels and the forming and placing of the Coping on each fascia. There will be some cast in place closure placements near the bottom of the arch at all four corners. The structural steel supports will be installed during the closure period and as long as everything is fabricated correctly. We should be able to connect everything with relative ease. Each connection point will have a slotted connection or other adjustment mechanisms to ensure proper alignment. There will be a staging system inside the arch so the connections can be made on the back side of the panels. The cast in place coping will be formed and placed during normal working hours while a single lane closure is utilized when necessary.

In addition to the remaining concrete items (precast & cast-in-place) there will be several other contract items to complete after the closure. We will be installing the Arch Lighting, removing our access platform and access roads, installation of approximately 500 cy of Type II stone, and installation of final slope stabilization / permanent erosion control measures. When the contract work is complete we will request and complete the final punch list and begin the demobilization process.

#### Concerns / potential issues or conflicts:

The arch lighting is vague and is somewhat of an unknown at this time, the contract seems to imply that it's up to the contractor to design and implement something that is acceptable to VAOT. We will be working with a subcontractor to get something designed and installed that will be both economical and functional for the state.

The arch panels will be transported laying down and consequently will have to be flipped upright to be installed. The rigging and setting of the arch panels is somewhat of an unknown because it will be important for them to hang plumb so both connections can be made (at arch and at structural steel). Another potential issue is the cast in place coping. The details on the plans call for a very small "air gap" between the bottom of the cast in place coping and the top of the precast arch pieces. I suspect there will be a modified detail that will hang down over the face of the panel to avoid any eyesores with regards to inevitable variations in the elevation of the precast panels. A detail will be discussed and presented for approval that will be constructible while providing the aesthetic appearance the state desires. The removal of the platform and access roads will be done the same way we installed them, the deck will be removed and the framing will be taken out. Then the sacrificial concrete (if necessary) will be removed and the area cleaned up to the satisfaction of the resident engineer.

						Qtr 4, 2013	Qtr 1, 2014	Qtr 2, 2014	Qtr 3, 2014
ID 1	Task Name PRECONSTRUCTION ACTIVITIES	Duration 116 days	Start Fri 10/4/13	Finish Fri 3/14/14	Sep	Oct Nov Dec	Jan Feb M	Mar Apr May Jun	Jul Aug Sep
2		116 days 1 day	Fri 10/4/13	Fri 10/4/13			-	<b>V</b>	1
3	Project Bid Date Preconstruction meeting		Thu 11/7/13	Thu 11/7/13		. :	1	1	1
		1 day	Fri 11/8/13	Fri 3/14/14		<u> </u>	i	_	
4	Initial Project Submittals	91 days					1		
5	Erosion Control Plan	1 day	Tue 11/19/13	Tue 11/19/13		1 :	 		1
6	Shop Drawings for Precast	60 days		Thu 1/30/14					
7	other applicable shop drawings	90 days		Thu 3/13/14					i
8	Demo Plan	50 days	Fri 11/8/13	Thu 1/16/14					
9	Precast Erection plan	50 days	Fri 11/8/13	Thu 1/16/14					
10	Placement of precast pieces (JP CARRARA)	60 days		Fri 3/14/14				<u>l :                                    </u>	
11	PRE-CLOSURE ACTIVITIES (on site)	102 days		Fri 4/25/14		<b>-</b>	1		
12	Dig Safe / Initial Layout	3 days	Mon 3/3/14	Wed 3/5/14			<b> </b>		
13	setup field office	3 days	Mon 12/9/13			1:			1
14	install Erosion control Mesures	5 days		Wed 3/12/14	] ;			<b>L</b>	
15	Cut and Cap Waterline	1 day	Thu 3/13/14	Thu 3/13/14		:		ŗ i	1
16	install sign posts for detour	5 days	Thu 3/6/14	Wed 3/12/14				<u>L</u> :	1
17	Install and cover detour signs	8 days	Thu 3/13/14	Mon 3/24/14			1	<u>.</u>	
18	install erosion control measures	4 days	Tue 3/25/14	Fri 3/28/14				<u>L</u>	
19	install access road on SW corner	5 days	Mon 3/31/14	Fri 4/4/14			1	<u>I</u> h	
20	Install access road on NE corner	5 days	Tue 3/25/14	Mon 3/31/14			1	<u>il</u>	1
21	install framing for platform under bridge	3 days	Mon 4/7/14	Wed 4/9/14	1 :	:	1	<u> </u>	
22	install deck on platform w/ tower(s)	4 days	Thu 4/10/14	Tue 4/15/14	1 1		i	: <u>L</u>	i
23	other items to prepare for shutdown	10 days	Wed 4/16/14	Fri 4/25/14			1		
24	CLOSURE PERIOD	45 days	Sat 4/19/14	Mon 6/2/14	1 :		1		1
25	Demolition	16.25 days	Sat 4/19/14	Mon 5/5/14	1 :	:	1		1
26	Close Road 7:00 am	0 days	Sat 4/19/14	Sat 4/19/14			1	<b>\$</b> _1	i
27	Remove Bridge railing / pavement	10 hrs	Sat 4/19/14	Sun 4/20/14			1	h	
28	excavate approaches	20 hrs	Sun 4/20/14	Tue 4/22/14			 	i i	
29	demolish arch	30 hrs	Tue 4/22/14	Sat 4/26/14		:	1 1 1	i I	1
30	demolish southern wings	20 hrs	Sat 4/26/14	Mon 4/28/14	1 !		1		
31	demolish northern wings	20 hrs	Sat 4/26/14	Mon 4/28/14	1 :		1 1	Ĭ	1
32	Excavate Ledge on Abutment 1 side	10 hrs	Tue 4/29/14	Wed 4/30/14	1 :	:	1	T	
33	Excavate ledge on Abutment 2 side	50 hrs	Tue 4/29/14	Mon 5/5/14		:	1	The state of the s	1
34	cleanup debris on platform	10 hrs	Sat 4/26/14	Sun 4/27/14			1	i i	t t t
	Task	Summary		Rolled Up	p Progr	ess	Gr	oup By Summary	
	Critical Tack	Rolled Up Task	######################################	Split	J				•
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							Qtr 4, 2013	Qtr 1, 2014		Qtr 2, 2014		3, 2014
ID	Task Name		Duration 16.75 days	Start	Finish	Sep	Oct Nov Dec	Jan Feb	Mar	Apr May	Jun Jul	Aug Sep
35	Arch	fau avala avvanant	16.75 days	Sun 4/27/14	Wed 5/14/14		:	1			-	
36	install staging towers		12 hrs	Sun 4/27/14	Tue 4/29/14			1				
37		tallation of arch footing - abutment 1	8 hrs	Wed 4/30/14	Thu 5/1/14		i	i		} ₩	į	
38	form and place northe	<u>-</u>	12 hrs	Thu 5/1/14	Fri 5/2/14		:	1		ļ <b>Ļ</b>		
39		tallation of arch footing - abutment 2	8 hrs	Mon 5/5/14	Tue 5/6/14	1		1		<u> </u>		
40	form and place souther		12 hrs	Tue 5/6/14	Wed 5/7/14		:	į		<u> </u>	į	
41	deliver / install precas	t arch pieces	12 hrs	Fri 5/9/14	Sun 5/11/14		:	1				
42	grout arch where appl	licable (at footings)	6 hrs	Sun 5/11/14	Sun 5/11/14		:	1				
43	form and place "key s	tone" at top of arch	20 hrs	Mon 5/12/14	Wed 5/14/14			1			į	
44	ABUTMENT 1 SIDE (NOF	RTH)	11.88 days	Wed 4/30/14	Mon 5/12/14						į	
45	prepare ledge for sub	footing - abutment 1	10 hrs	Wed 4/30/14	Thu 5/1/14		:	1		1 6		
46	form and place subfoo	oting on abutment 1	6 hrs	Thu 5/1/14	Fri 5/2/14	1		1		1 1		
47	deliver and set precas	st abutment 1 footing pieces	10 hrs	Fri 5/2/14	Sat 5/3/14		:	1		i 🚹		
48	grout under abutment	t 1 footing	8 hrs	Sat 5/3/14	Sun 5/4/14		:	1		H		
49	deliver and install pred	cast abutment breastwall pieces - abutment 1	8 hrs	Sun 5/4/14	Mon 5/5/14		:	1		<u> </u>	1	
50	grout abutment pieces	s where applicable (connection to footing)	8 hrs	Mon 5/5/14	Tue 5/6/14			1		i i	į	
51	deliver and install wing	g wall 1 - abutment 1 side	6 hrs	Tue 5/6/14	Wed 5/7/14	;						
52	deliver and install wing	g wall 2 - abutment 1 side	6 hrs	Wed 5/7/14	Wed 5/7/14		:	1				
53	Grout Wing Walls as	required (connection to footing and breastwall)	10 hrs	Thu 5/8/14	Fri 5/9/14	1	:	1				
54	backfill abutment 1		23 hrs	Fri 5/9/14	Mon 5/12/14			į			i	
55	ABUTMENT 2 SIDE (SOU	ЈТН)	14.38 days	Mon 5/5/14	Mon 5/19/14	;		į			į	
56	prepare ledge for sub-	footing - abutment 2	10 hrs	Mon 5/5/14	Tue 5/6/14		:	1				
57	form and place subfoo	oting on abutment 2	6 hrs	Tue 5/6/14	Wed 5/7/14		:	1				
58	deliver and set precas	st for abutment 2 footing	10 hrs	Wed 5/7/14	Thu 5/8/14		:	1				
59	grout under abutment	t 2 footing	8 hrs	Thu 5/8/14	Fri 5/9/14	į į		į			į	
60	deliver and install pred	cast abutment breastwall pieces - abutment 2	8 hrs	Fri 5/9/14	Sat 5/10/14			1				
61	grout abutment piece	s where applicable (connection to footing)	8 hrs	Sat 5/10/14	Sun 5/11/14		:	1				
62	deliver and install wing	g wall 3 - abutment 2 side	6 hrs	Sun 5/11/14	Mon 5/12/14	1		1				
63	deliver and install wing	g wall 4 - abutment 2 side	6 hrs	Mon 5/12/14	Mon 5/12/14	į į		į			į	
64	form and place CIP w	ing wall #3	30 hrs	Mon 5/12/14	Thu 5/15/14		:					
65	form and place CIP w	ing wall #4	30 hrs	Tue 5/13/14	Fri 5/16/14		:	1				
66	Grout Wing Walls as	required (connection to footing and breastwall)	10 hrs	Tue 5/13/14	Wed 5/14/14		:	1			1	
67	backfill abutment 2	<u> </u>	23 hrs	Fri 5/16/14	Mon 5/19/14			1			į	
68	SUPERSTRUCTURE		22 days	Sat 5/10/14	Sun 6/1/14		:				, !	
	<u> </u>					'		1		<u>'</u>		
		Task	Summary	The state of the s	Rolled Up	Progre	ess Es		Group	By Summary		
			Rolled Up Task		Split	- 3.			1*		•	•
	full project schedule - rev 1 i 12/20/13	[	•									
Date. 11	Flogless		Rolled Up Critical Task		External	ıasks						
	Milestone • Rolled U			$\Diamond$	Project S	ummar	у					
		ı		Page 2								
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							Qtr 4, 2013	Qtr 1, 2014		Qtr 2, 2014	Qtr 3, 2014		
ID 69	Task Name Install Structural Stee	l heams	Duration 6 hrs	Start Sat 5/10/14	Finish Sun 5/11/14	Sep	Oct Nov Dec	Jan Feb	Mar	Apr May Jun	Jul Aug Sep		
70			6 hrs	Sun 5/11/14	Sun 5/11/14			1		<b>;</b>	1		
71	prepare for NEXT bea		12 hrs	Mon 5/12/14	Tue 5/13/14		:	1		; <b>₩</b>			
								1		<b>.</b>	1		
72	form and place closur	·	15 hrs	Tue 5/13/14	Thu 5/15/14					<b>,</b>	1		
73		roach slabs - abutment 1	6 hrs	Mon 5/12/14	Mon 5/12/14			1		<u> </u>	1		
74	11	roach slabs - abutment 2	6 hrs	Mon 5/19/14	Tue 5/20/14					<u> </u>			
75	<u> </u>	e strips in approach slabs	5 hrs	Tue 5/20/14	Tue 5/20/14					. ↓			
76	form and place levelin		17 hrs	Thu 5/15/14	Sat 5/17/14			1		<u> </u>	1		
77	form and place CIP br	ridge rail parapets	30 hrs	Tue 5/20/14	Sat 5/24/14			1			1		
78	form and place sidewa	alk	15 hrs	Sun 5/25/14	Tue 5/27/14					6			
79	install spray applied m	nembrane	12 hrs	Tue 5/27/14	Thu 5/29/14			1		<u> </u>	1		
80	finish backfill / approa	ches (fine grade)	12 hrs	Thu 5/29/14	Fri 5/30/14	1 :		1		<b>L</b>	1		
81	pave project - BASE (	DNLY	15 hrs	Fri 5/30/14	Sun 6/1/14								
82	Open Road		0 days	Sun 6/1/14	Sun 6/1/14	1		1			1		
83	Approaches / Utilities		20.5 days	Tue 5/13/14	Mon 6/2/14	1 :		1			1		
84	Install Waterline unde	r bridge & activate	3 days	Tue 5/13/14	Fri 5/16/14			į					
85	install drainage mater	ials	3 days	Fri 5/16/14	Mon 5/19/14						1		
86	install guardrail & Brid	lge rail	12 hrs	Sun 6/1/14	Mon 6/2/14						1		
87										·	1		
88	POST CLOSURE ACTIVITIES		68 days	Sun 6/1/14	Fri 8/22/14								
89	Remove Detour Signs		5 days	Sun 6/1/14	Fri 6/6/14			1			<u> </u>		
90	set precast Arch Panels		5 days	Sun 6/1/14	Fri 6/6/14			1			1		
91	form and place closure pou	irs at low corners	5 days	Fri 6/6/14	Wed 6/11/14								
92	form and place CIP coping	on Fasica(s)	15 days	Wed 6/11/14	Thu 6/26/14						<u>.</u>		
93	Form and place Type B Cu		2 days	Thu 6/26/14	Sat 6/28/14			1		1 2-2-			
94		form and place sidewalk - off bridge			Wed 7/2/14			1		!	<u> </u>		
95	remove staging and platfor		4 days	Sat 6/28/14 Wed 7/2/14	Wed 7/23/14			į			######################################		
96	install arch lighting		3 days	Fri 6/6/14	Mon 6/9/14					<u></u>	<del>                                     </del>		
97	cleanup / shape all slopes		10 days	Wed 7/23/14	Wed 8/6/14		:	1					
98	Pave Surface		1 day	Wed 8/6/14	Thu 8/7/14	-		1		1			
99	misc cleanup / punchlist		5 days	Thu 8/7/14	Thu 8/14/14			i		I	<b> </b>		
100	demobilize		6 days	Thu 8/14/14	Fri 8/22/14			1		1 1 1	il il		
101	project complete		0 days	Fri 8/22/14	Fri 8/22/14		:	1		1 1 1			
101	project complete		0 days	1110/22/14	1110/22/14			i		i			
		Total Relationship	0		<b>.</b>	- D-			O	D O			
	Project: full project schedule - rev 1  Critical Task  Rolled		Summary		Rolled U	p Progres	SS		By Summary				
			Rolled Up Task		Split		1 1 1						
Date: Fr			Rolled Up Critical Task	ed Up Critical Task			External Tasks						
		Milestone	Rolled Up Milestone		Project S	Summary							
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		Page 3											